

A NEW BAT BUG FROM SOUTHERN CHILE

(Hemiptera: Cimicidae)

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In 1960 Mr. Luis Peña sent several nymphs of Cimicidae collected from bat roosts in a hollow tree in southern Chile. On the basis of nymphal characters alone, it appeared that these specimens belonged to the unique subfamily Primicimicinae—known only from the single genus and species *Primicimex cavernis* Barber of Texas and Guatemala. Several attempts to obtain adults and establish laboratory colonies were unsuccessful so Mr. Peña offered to serve as guide on a field trip in search of this and other unique southern Cimicidae. Travel was by jeep from Santiago south to Chiloe Island during the southern summer month of January, 1962. Thanks are due to Mr. Peña and his assistant, Guerrero, for enthusiastic support at all times and for much of the success of the project. Financial assistance was received from the United States Public Health Service through Grant No. E-1496-(C4). Dr. Jacques Carayon of the Laboratoire d'Entomologie Agricole Tropicale in Paris studied the internal reproductive organs and made available his voluminous notes and illustrations. Norihiro Ueshima at the University of California in Berkeley made cytological preparations and studied the chromosomes. Dr. Seth Benson of the University of California Museum of Vertebrate Zoology identified the bats. Mrs. Celeste Green made the drawings in the style of previous Cimicid illustrations.

Bucimex Usinger, new genus

Size large, 6.8 mm. (dried) to 9.6 mm. (slide mounted). Body sub-oval, flattened above. Bristles dense and long, the individual bristles curved, minutely notched at tip and serrate on outer side.

Clypeus not widened anteriorly, the sides subparallel. Labrum over twice as long as wide, gradually tapering to rounded tip. Antennae about half again as long as width of pronotum, the second segment three times as long as first, one-eighth longer than third, the fourth two-thirds as long as third. Rostrum short, reaching only to base of head or a little onto prosternum.

Pronotum transverse, the disk convex at middle, depressed sublaterally, the sides rounded. Hemelytral pads broadly suboval. Metasternum not plate-like, forming a subrounded lobe between middle coxae.

Spermalege located ventrally between third and fourth visible ventral

segments on right side, the ectospermalege sac-like, longer than wide, extending forward from narrow opening at intersegmental membrane.

Legs with hind femora four times as long as wide, the tibiae with mottled markings (pseudojoints) and the front and middle pair with small but distinct apical pads or fossae in both sexes. Tarsi with 3 stout spines at inner apex of third segment in apposition to claws.

Type species: Bucimex chilensis Usinger, n. sp.

***Bucimex chilensis* Usinger, new species**

Color brown with palc yellowish at base and sides of head, on either side of middle and in a transverse fascia behind middle of pronotum, on either side of scutellum at basal two-thirds, at point of articulation of hemelytral pads, and more or less on appendages and underside.

Head as long (expanded slide mounted specimen) as wide including eyes, 1.05 mm, the latter less than one-third the width of interocular space, 0.2 mm x 0.6 mm, small and round in outline. Sides of clypeus subparallel, a little sinuate, the apex truncate. Sides of head narrowed immediately behind eyes and then widened near base. Clypeus beset with long, erect bristles except on either side of base, the rest of head smooth and without bristles except adjacent to clypeus and forward near anterior margins of eyes to antenniferous tubercles. Postocular area with one prominent bristle behind each eye. Antennae about half again as long as width of pronotum, 3.3 mm, the proportion of segments 8:24, 21:14, first and second segments stout and beset with short bristles, apical segments slender with short bristles. Rostrum short, reaching only to base of head in slide mounted specimens (attaining apex of prosternum in dried specimens), proportion of segments 6:10:5; width narrow, about equal to thickness of first antennal segment. *Pronotum* about twice as wide as long at middle, 2.1 mm x 1.1 mm, the disk convex, rough and beset with long bristles, depressed sublaterally and narrowly before hind margin, the margins thickened and slightly reflexed. Lateral margins evenly arcuate, anterior "angles" rounded, anterior margin roundly emarginate behind head. Disk glabrous along two vertical pale marks at middle and laterad at about basal fourth. Lateral bristles very long, about as long as first antennal segment, 0.4 mm.

Scutellum more than half as wide as pronotum, 24:42, the exposed part in slide mounted specimens about half as long as wide. Disk smooth or minutely granular on semilunate yellow areas on either side of middle, the middle brown, feebly punctured, and with some bristles; posterior and lateral areas dark brown to black, coarsely rugose and beset with longer bristles; apex moderately swollen or inflated; lateral margins constricted at apical third. *Hemelytral pads* transversely suboval, nearly straight at contiguous inner margins, broadly, evenly rounded postero-laterally, the articulations at sides of scutellum smooth, conspicuous, yellow; length 1.3 mm, ratio of length to width 26:35; disk coarsely punctured and beset with long bristles, antero-lateral margin thick, the disk depressed submarginally. *Abdomen* above widened, the ratio of width across 4th (3rd visible) segment:hemelytral pads:pronotum:head including eyes—88:70:42:22. Hind margins of abdominal segments sinuate, thin, translucent, disk rugosely

punctate and with numerous erect bristles; segments 4, 5, and 6 (visible) each with two pale spots at middle possibly corresponding to the paired nymphal scent gland openings, though the latter are at anterior margin of each segment whereas the pale spots in adults approach the middle of each segment. Under surface with many bristles; prosternum not produced as a point between front coxae; mesosternum with hind margin thickened and arcuate; metasternum a somewhat inflated lobe, separating middle coxae



Fig. 1. *Bucimex chilensis* Usinger, new species. Lonquimay, Malleco, Chile, showing dorsal (right) and ventral (left) surfaces of female and detail of male genital segment and paramere.

by a distance approximately equal to width of a coxa. Scent gland evaporating area without special structures, consisting of a dull area over most of metapleuron. Female genital segments ventrally consisting of lateral spiracle-bearing plates and two sublateral plates of the 8th segment which narrow toward the middle and are subcontiguous. Behind this are two longitudinal plates that taper to apices and a pair of gonopophyses that are slightly inflated apically and densely beset with long bristles. Male genital segment slightly wider across base than long, 28:24, bent slightly to left, the paramere as long as segment, curved and slightly sinuate at tip, tapering gradually to acute apex which reaches an open pocket at left side of asymmetrical 8th segment.

Legs rather long and slender, the hind femora 2.8 mm long, four times as long as wide, 56:14; hind tibiae one-fourth longer than femora, 80:56, distinctly curved and mottled (pseudojoints) on apical half. Hind tarsi one-third the length of tibiae, the second and third segments subequal, third segment with 3 stout spines on inner apex, claws angulately produced subbasally.

Length (slide mounted female) 8.6 mm, width of pronotum 2.05 mm; male, length 9.6 mm, width of pronotum 2.15 mm. Dry pinned specimens: female, length 6.8 mm, width (pronotum) 2.15 mm.

Holotype female, 10 KM SOUTH OF LONQUIMAY, MALLECO, Chile, January 11, 1962, R. L. Usinger collector; allotype, male, same data as holotype; paratypes, 12 specimens, same data as type and 6 males and several nymphs near Dalcahue, Chiloe I., Chile, January 22, 1962, R. L. Usinger collector. Nymphs only were taken at Tolhuaca, Curacautin, Malleco, Chile, January 11-25, 1959, and Dalcahue, Chiloe I., Chile, February 10-12, 1954, by Luis E. Peña.

At Tolhuaca in 1959 Luis Peña found small nymphs in the hollow trunk of an *Araucaria* tree in a dense moist forest of tall trees. These specimens were associated with the bat, *Myotis chilensis* (Waterhouse). Unfortunately, local inhabitants of the region built a fire in the hole and destroyed the colony. Near Lonquimay a hollow *Nothofagus* tree was found with bats present and bugs hiding in cracks inside the hollow trunk. Near Dalcahue bats and bugs were found beneath a piece of loose bark of a large *Nothofagus* tree. The area had been burned several years earlier and the open type of country was quite dry. Nymphs, adults, cast skins and eggs were found in a compact cluster about 15 feet from the ground. A third collection was made beneath loose bark of a *Nothofagus* tree about 25 km north of Dalcahue. Under bark near the latter place the bat *Histiotus montanus magellanicus* (Philippi) was taken.

The relationships of *Bucimex* are most perplexing. The large size, short rostrum, narrow clypeus, long slender labrum, long, fine, serrate bristles, suboval hemelytral pads, mottled tibiae and stiff spines at inner apex of third tarsal segment suggest affinity with *Primicimex*. Also there is a long lone bristle behind each eye in both of these genera. On the other hand, *Primicimex* lacks a spermalege and usually receives sperm between the 5th and 6th (4th and 5th visible) tergites on the left side, there being a transverse pigmented area at that point. *Bucimex* differs radically from this, having a distinct sclerotized ectospermalege between the 4th and 5th (3rd and 4th visible) ventral segments on the right side. The organ is sac-like, enlarged apically and bent toward the middle of the body. Through the cooperation of my colleague, Dr. Jacques Carayon, I am able to report that the mesospermalege is very large and sac-like, exceeding the size of an ovary. Dr. Caryon also studied the mycetomes, finding that *Bucimex* possesses a pair situated in the middle of the fat tissue near the dorsal membrane of the abdomen at the level of the fourth visible abdominal segment. *Primicimex* is unique among the Cimicidae in lacking discrete mycetomes. The chromosome number was found by Mr. Ueshima to be $13 + XY$ (1st metaphase, $n \text{ ♂}$). This is close to certain colonies of *Cimex lectularius* and differs from most other Cimicidae. The chromosome number of *Primicimex* is unknown.

To summarize, *Bucimex* appears on external characters to belong to the Primicimicinae whereas its internal reproductive system and mycetomes would perhaps place it closer to the Cimicinae.

BOOK NOTICE

A LIST OF THE APHIDS OF NEW YORK, by Mortimer B. Leonard, Washington, D.C. Proceedings of the Rochester Academy of Science, Vol. 10, No. 6, pp. 289-, 428, 4 plates, Feb. 1963. Paper covers. For sale at \$1.50 by the Librarian, Rochester Academy of Science, Rush Rhees Library, University of Rochester, Rochester, N.Y.

The life histories, economic importance, method of feeding, production of winged forms, productivity, role as vectors of plant viruses, and other pertinent information are discussed as introductory material. Detailed records of the distribution of about 350 species of aphids known to occur in New York are given and a list of over 700 food plants on which they occur.